

Meteorological observations at Honolulu.

JUNE, 1898.

June, 1898.	Pressure at sea level.			Temperature.				Relative humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
	7 a. m.	8 p. m.	9 p. m.	7 a. m.	8 p. m.	9 p. m.	Maximum.	Minimum.	7 a. m.	8 p. m.	9 p. m.	Direction.	Force.	
1.	30.04	30.00	30.08	72	80	74	81	69	70	56	74	ne.	4	4.2
2.	30.06	30.01	30.05	71	79	73	80	68	70	57	73	ne.	3	4.0
3.	30.04	30.00	30.04	71	78	72	79	67	70	58	72	ne.	3	4.0
4.	30.06	30.01	30.05	71	78	72	79	67	70	58	72	ne.	3	4.0
5.	30.05	30.00	30.04	71	76	71	78	66	67	60	70	ne.	3	4.0
6.	30.02	29.99	30.04	70	75	70	77	65	67	60	70	ne.	3	4.0
7.	30.04	30.00	30.04	70	78	72	79	67	70	58	72	ne.	3	4.0
8.	30.04	30.01	30.05	70	78	72	79	67	70	58	72	ne.	3	4.0
9.	30.07	30.02	30.06	70	80	74	81	68	70	58	72	ne.	3	4.0
10.	30.09	30.04	30.09	72	81	75	82	69	70	59	73	ne.	3	4.0
11.	30.09	30.04	30.09	72	81	75	82	69	70	59	73	ne.	3	4.0
12.	30.06	30.02	30.06	74	80	74	81	68	70	58	72	ne.	3	4.0
13.	30.06	30.04	30.11	73	81	75	82	69	70	58	72	ne.	3	4.0
14.	30.14	30.11	30.17	72	80	74	81	68	70	58	72	ne.	3	4.0
15.	30.16	30.11	30.15	71	79	74	81	68	70	58	72	ne.	3	4.0
16.	30.14	30.09	30.13	72	80	74	81	68	70	58	72	ne.	3	4.0
17.	30.10	30.02	30.06	72	77	73	82	69	70	58	72	ne.	3	4.0
18.	30.05	30.01	30.06	69	75	70	84	68	70	58	72	ne.	3	4.0
19.	30.10	30.07	30.12	71	82	75	84	68	70	58	72	ne.	3	4.0
20.	30.11	30.04	30.09	74	82	75	84	68	70	58	72	ne.	3	4.0
21.	30.09	30.01	30.04	70	76	70	82	69	70	58	72	ne.	3	4.0
22.	30.04	30.07	30.10	71	75	73	83	68	70	58	72	ne.	3	4.0
23.	30.14	30.11	30.16	68	81	76	83	68	70	58	72	ne.	3	4.0
24.	30.13	30.10	30.12	74	80	74	81	68	70	58	72	ne.	3	4.0
25.	30.06	30.00	30.05	74	80	76	81	68	70	58	72	ne.	3	4.0
26.	30.04	30.02	30.05	74	80	76	82	67	70	58	72	ne.	3	4.0
27.	30.05	30.03	30.09	74	77	76	81	68	70	58	72	ne.	3	4.0
28.	30.05	30.01	30.09	73	78	75	81	68	70	58	72	ne.	3	4.0
29.	30.04	29.99	30.04	72	80	75	81	68	70	58	72	ne.	3	4.0
30.	30.02	29.97	30.05	68	80	74	82	67	70	58	72	ne.	3	4.0
30.07	30.03	30.08	71.5	79.5	74.0	81.5	69.9	.....	62	75	.....	2.5	4.2	2.90

The station is at 21° 18' N., 157° 50' W.; altitude 50 feet. Pressure is corrected for temperature and reduced to sea level, but the gravity correction, -0.06, is still to be applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10. Two directions of wind, or values of wind force, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

Monthly mean temperature (7 + 2 + 9) ÷ 3 is 75.0, and the normal mean is 76.5. The normal rainfall for June is 1.56. The rain gauge, 8 inches in diameter, is 1 foot above ground. Thermometer, 8 feet above ground. Ground is 50 feet above sea level.

OBSERVATIONS AT PORT AU PRINCE, HAITI.

Through the kind cooperation of Prof. T. Scherer of Port au Prince, Haiti, the meteorological observations taken by him at 7 a. m., local time, or 11:49 a. m., Greenwich time, are communicated in manuscript for early publication in the MONTHLY WEATHER REVIEW. By entering these on the monthly and annual charts, published by the Weather Bureau, we obtain an important extension southeastward of our

field of study. The observations are taken 1^h 11^m earlier than those of the Weather Bureau telegraph system. The original reports are in metric measures; the conversions are by the Editor.

The barometer is 119 feet above sea level; its readings have been corrected by Professor Scherer for temperature and elevation, but not for gravity, this latter correction is -0.064 inch; the thermometers are 6.7 feet above ground; the rain gauge, 7.2 feet above ground. The wind velocity is given in miles per hour.

The position of Port au Prince, Haiti, is latitude 18° 34' N., longitude 72° 21' W., or 4^h 49^m west of Greenwich. Additional records for this station are published in the annual volumes of the Central Meteorological Institute at Vienna.

Observations at Port au Prince, Haiti.

JUNE, 1898.

Date.	Barometer reduced.	Temperature.		Rel. humidity.	Wind.		Clouds.		Preceding 24 hours.		
		Air.	Dew-point.		Direction.	Velocity.	Kind.	Amount.	Direction.	Total rain.	Temperature.
1.....	Inches	80.95	76.3	70.0	e.	4	ck	7	w.	Inch.	89.6
2.....	29.95	75.6	70.3	85	ese.	7	ck, ks	2	w.	1.06	89.4
3.....	29.99	75.1	75.0	82	e.	0	k, ck	3	ssw.	.....	91.2
4.....	30.01	77.1	71.2	81	e.	0	.....	0	.....	1.70	92.3
5.....	29.98	75.9	71.8	82	.....	0	.....	3	sw.	0.14	90.7
6.....	29.97	76.3	68.2	82	e.	11	ck; cs	10	sw; wdw.	0.00	88.5
7.....	29.98	75.3	69.4	81	e.	16	cs	4	sw; wdw.	0.00	90.5
8.....	30.00	75.3	71.8	81	ese.	16	cs	4	sw; wdw.	0.00	91.2
9.....	30.03	75.9	70.0	82	ese.	7	cs	3	w.	0.00	91.4
10.....	30.06	75.4	66.6	83	se.	4	cs	1	.....	0.00	92.3
11.....	30.04	75.8	74.5	87	se.	9	cs	4	wsu.	0.00	91.6
12.....	30.08	77.9	68.0	69	ene.	7	k	9	se.	0.00	93.0
13.....	30.09	78.4	68.5	71	e.	4	c	1	.....	0.00	93.3
14.....	30.08	78.4	72.9	81	ne.	2	cs	9	.....	0.00	89.6
15.....	30.07	79.5	68.2	70	ese.	7	ck, cs	1	w, sw.	0.00	93.0
16.....	30.04	79.5	66.6	66	e.	4	cs	1	wnw.	0.00	93.0
17.....	30.03	77.0	67.6	74	e.	2	k	1	.....	0.00	94.6
18.....	30.04	80.6	65.8	83	e.	7	.....	0	.....	0.61	94.5
19.....	30.05	79.7	68.7	70	ese.	9	.....	0	.....	0.00	95.6
20.....	30.04	79.2	68.2	70	e.	7	.....	1	.....	0.00	95.6
21.....	30.04	78.1	66.7	73	se.	2	pc	10	.....	0.00	95.0
22.....	30.06	80.4	67.8	72	se.	9	ck	1	se.	0.00	95.5
23.....	30.06	80.4	70.0	74	e.	4	cs	1	s.	0.00	94.8
24.....	30.06	79.7	67.3	84	ese.	9	cs, k	2	.....	0.00	95.2
25.....	30.03	77.0	67.6	74	ese.	4	cs.	2	.....	0.00	95.2
26.....	30.04	80.4	67.6	67	ese.	13	.....	0	.....	0.00	92.7
27.....	30.09	77.0	64.9	68	se.	4	.....	0	.....	0.00	92.7
28.....	30.06	78.8	67.5	68	ene.	4	cs, k	1	.....	0.28	93.7
29.....	30.03	73.9	62.8	88	.....	0	cs	4	w.	1.38	93.0
30.....	30.04	74.3	70.9	90	e.	4	.....	0	.....	0.52	91.4
Sum.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.69	.....
Means.	30.03	77.9	69.1	75.7	.....	7	.....	.....	.....	92.1	73.0

p = pallio.

NOTES BY THE EDITOR.

SEASONAL FORECASTS IN OREGON.

For several years past the attention of our readers has been called to the spring and autumn predictions for the coming summer and winter, respectively, as published by Mr. B. S. Pague, Local Forecast Official at Portland, Oreg. We quote the following from the morning weather map of July 7, 1898, as published by the Weather Bureau at Portland, Oreg.:

The first summer type of weather conditions appears this morning. The appearance of this type marks the commencement of the summer or dry season over the Pacific Northwest. From now until the appearance of the winter type, little or no rain will fall. There will be two, three, or four days of clear, warm weather; then winds changing to the southwest, barometer rising, high fog, and cool weather for twenty-four or thirty-six hours; during the change sprinkles of rain will occur along the Oregon and Washington coast, and sometimes over western Washington and northwestern Oregon; then a day of clear weather and delightfully mild temperatures, then from two to four days of high temperatures again. The cycle is again repeated. Such are the weather conditions prevailing under the summer type. Occasionally thunderstorms occur; these follow heated periods.

Under the summer type, hot north to east winds are probable east of the Cascades; such winds never prevail except under this one distinct type. The appearance of the summer type of weather conditions is later than usual; the dates of the appearance of the summer and winter types for the past few years are:

SUMMER.		WINTER.	
1895.....	April 20	1895.....	November 12
1896.....	June 13	1896.....	October 20
1897.....	April 11	1897.....	October 19
1898.....	July 7		

Fair weather has prevailed over the Pacific Northwest during the past twenty-four hours. No precipitation has occurred.

The temperature has remained nearly stationary; it ranges from 48° at Fort Canby and Spokane to 56° at Idaho Falls and Wallawalla.

The weather is clear this morning, with northerly winds.

METEOROLOGICAL OBSERVATIONS IN THE KLONDIKE.

In the July number of the Scottish Geographical Magazine, Mr. William Ogilvie, astronomer and land surveyor to the Dominion of Canada, gives some account of the geog-

raphy of the headquarters of the Yukon River and the approaches to the Klondike region. According to this account gold was known to exist in the Yukon country as early as 1847, and Mr. Harper in 1872 reported gold on the Yukon everywhere, but coarse gold was not discovered until 1886, on the Forty Mile River; in 1896 gold was found in abundance in the Klondike district. At the close of his text Mr. Ogilvie gives the following summary compiled from his records of temperature, but we infer that the observations were made at many places in the course of his travels as a surveyor, and therefore do not represent any specific station. Had we the original record, then the individual observations could be entered upon the daily weather maps and would give us more exact information as to the northern limit of the cold waves that flow from the northwest provinces southeastward into and over the United States.

Year and month.	Mean of maxima.	Mean of minima.	Highest maximum.	Lowest minimum.
	° F.	° F.	° F.	° F.
1887, August	39.9	31.7	.....	21.6
September	31.7	.....	.....	16.0
October	18.5	.....	.....	4.0
November	-5.1	.....	.....	-24.1
December	-27.6	-33.6	10.5	-55.1
1888, January	-15.3	-25.3	13.0	-53.5
February	-4.3	-16.8	24.2	-52.7
March .....	.....	-11.5	.....	-52.7
April .....	.....	-20.4	.....	-37.7
May	43.3	19.8	55.0	-1.8
1895, August .....	.....	40.1	.....	25.0
September .....	.....	30.9	.....	21.5
October .....	.....	19.4	.....	-12.7
November	11.9	4.2	38.5	-36.3
December	-13.8	-18.2	6.0	-55.4
1896, January	-23.0	-41.9	6.0	-67.9
February	-11.6	-25.5	32.0	-64.8
March	18.1	-2.4	39.5	-37.3
April	24.0	2.0	49.0	-25.4
May	48.7	28.8	62.0	5.0
June	65.1	39.8	80.0	27.8
July	68.9	44.5	81.0	33.0
August	62.6	42.1	76.0	27.2
September	50.5	34.3	63.0	4.8
October	32.9	20.2	51.0	-1.0
November	-6.0	-14.7	22.5	-38.0
December	-6.5	-17.4	11.0	-44.5
1897, January	-14.0	-24.0	10.0	-55.6
February	0.6	-12.3	31.0	-36.0
March .....	.....	-14.7	.....	-54.3
April .....	.....	18.1	.....	5.0

WEATHER BUREAU SERVICE IN ALASKA.

THE MONTHLY WEATHER REVIEW for April gave some account of the proposed establishment of an Alaskan section of the Climate and Crop Service, under the direction of Mr. Hector L. Ball. The following interesting letter has been received from him:

SITKA, ALASKA, June 15, 1898.

Prof. WILLIS L. MOORE,
Chief of Weather Bureau,
Washington, D. C.

SIR: I have the honor to inform you that a location has been secured for at least six months, and that the instruments have been placed in position. Observations of temperature and rainfall were begun at 8 a. m. this date. The office room has not yet been papered and cleaned, hence the barometer has not been hung, but this will be done in about three days. The location is an ideal one, being on the top of a hill about 125 feet above mean tide, and about one-fourth of a mile from the bay. This will apparently give temperature and rainfall values that will be unaffected by the ocean and free from mountain currents. The office building is very small, the Weather Bureau office being 8 by 15 feet. However, we were very fortunate to secure so good a location, as some officials are yet without office quarters. No definite arrangements have been made for quarters after the end of the present lease, but it is hoped that the present quarters can be re-leased.

The office roof would not permit of a platform, it being too small and insecure. Accordingly, I have had erected a platform 20 by 20 and 6 feet from the ground. This holds the anemometer and wind vane and the sunshine recorder. The instrument shelter I have erected over sod. As soon as a suitable day arrives photographs will be taken of the building and instruments, and a copy will be sent you. The elevation will also be taken and recorded. As stated in a former letter one barometer was broken in transitu, so I have no means of determining the error, if any, of the one in use.

I have everywhere been cordially received by the people of this Territory. The establishment of a Weather Bureau and Experiment Station meets the wishes of every one, and will doubtless be of great value to those living here and to people of other countries.

Thus far the weather has been very delightful; the first half of June having been unusually warm, dry, and sunshiny. Vegetation is marvellously rich and abundant, and were it not for sudden changes, cool nights, and the prevailing cloudiness this would make a fine agricultural and residential country.

(Signed)

H. L. BALL,
Section Director.

NOTES FROM THE JUNE REPORTS OF THE CLIMATE AND CROP SECTIONS.

ARIZONA.

Sand or dust storms were recorded at seven stations; that on the 18th was unusually severe, extending over Cochise, Graham, Pima, and the southern part of Navajo counties. Among the special reports are the following: Fort Grant, Graham County, altitude 4,916 feet, from 3:55 to 4:40 p. m., severe hurricane storm from north-northeast, carrying a large amount of dust from the Gila Valley, breaking large limbs from almost every cottonwood tree; Oro Blanco, Pima County, altitude 4,200 feet, most severe sand storm ever seen here occurred about sundown on the 18th. (The hours here given are likely to be local Pacific standard, not seventy-fifth meridian time.)

CALIFORNIA.

For the first time in many months the printed report of the California section is received in time to be included in this collection of notices. The number for June contains a special contribution by Dr. C. M. Richter on the climatology of the citrus belt in California, with special reference to the absence of frosts from November to April. He says:

There is no doubt that the western slope of the Sierra Nevada foothill region and also that part of southern California, inland, of which Riverside is a fair representative, offer very favorable climatic conditions for the growth of citrus fruit. They are subject, however, although rarely, to minimum temperatures, which have affected and which may affect citrus fruit disastrously. The winter of 1854 was probably more severe than the winter of 1888, or of 1898, when minimum temperatures below 20° occurred in some portions of these citrus regions. It appears that the region of the Santa Barbara foothills and probably of the entire foothill region of the Coast Range southeast of Santa Barbara, wherever the foothills do not recede too far from the ocean, is never affected in such winters to a degree sufficient to injure the growth of citrus fruit. Regular observations of temperature have been taken at Santa Barbara since 1870. The archives of the mission do not mention any injury done to any vegetation by cold temperature before 1870. Since 1870 the two lowest temperatures observed at Santa Barbara were 28.5°, on one January morning, 1888, and the next lowest, 30.5°, on another morning of the same month and year. The comparison of the climate of Santa Barbara city and Pine Crest exhibits strikingly the greater warmth of the foothill region and attests the immunity of the Santa Barbara foothills from killing frosts.

Minute studies of this character into the details of the distribution of climatic peculiarities will repay the labor in every State of the Union, since there is thus made known some positive knowledge in place of the ignorance that would otherwise prevail—knowledge that will inevitably lead to the cultivation of special crops in regions that would otherwise be neglected.

This same June report has also a special article by Mr. W. H. Hammon on the drought of 1897-98 in California. He shows that there was practically no difference in the rainfall and its distribution in the dry seasons from November to May, 1850-51, 1863-64, 1876-77, and 1897-98; therefore, the last drought is not unprecedented. Taking the State as a whole, the rainfall during the past season has slightly exceeded half the amount of a normal year. The greatest deficiencies were in southern California and the interior valleys, where the normal precipitation is light. The deficiency in the Sierras and along the northern coast, where the normal rainfall is heavy, was from 20 to 40 per cent.